Wildfire, Watersheds, and Water Sustainability

Sustainable Water Resources Roundtable

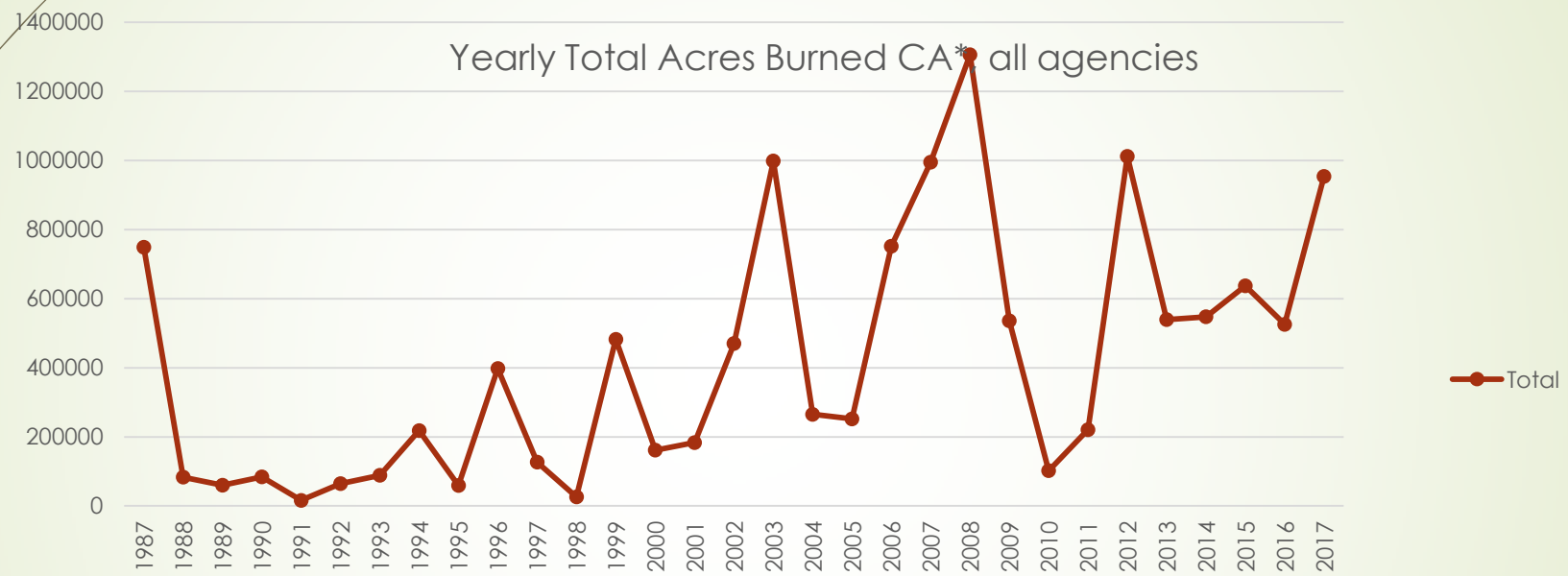
May 3, 2018

- Jeff TenPas, Burned Area Emergency Response
- US Forest Service

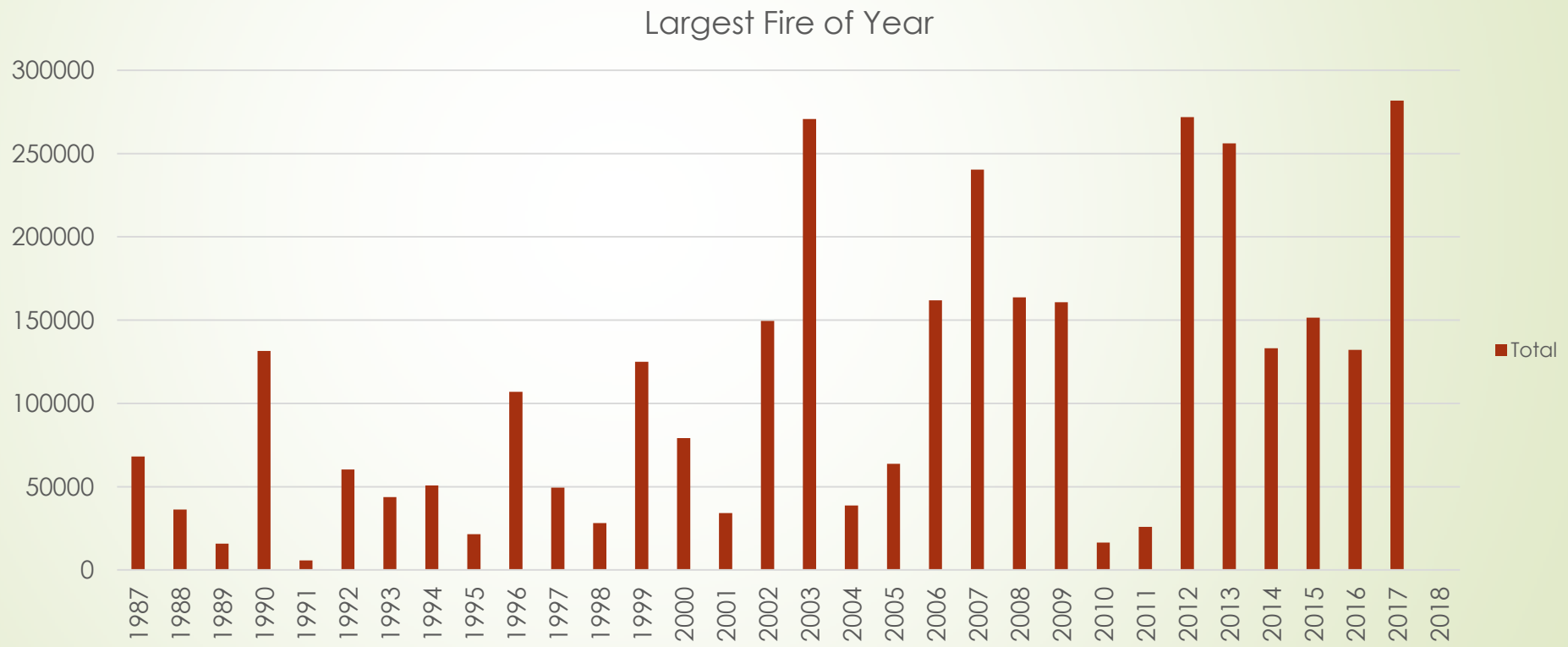
Times Have Changed: Changes in Fire Regime, and Watershed Affects

- Longer, warmer fire season
- Larger fires
- Higher severity fires
- On an upward trend

More Acres Burned by Wildfires



Fires are Larger



Post-Fire Watershed Response
Thomas Fire – Debris Flow

Post-Fire Watershed Response
Thomas Fire Debris Flow, January 9, 2018

Change in Watershed Affects

- Larger watersheds burned at higher severity
  - More frequent large scale erosion events
  - Loss of soil, nutrients, water holding capacity, and soil productivity
- Debris flows
- Floods
- More channel scour in higher order channels
- Less refugia for fish and riparian species
- More frequent disturbance

US Forest Service Burned Area Emergency Response (BAER)

- Coordinated response with local, state, and federal agencies
  - Clarity on responsibilities
- Assessment of Values at Risk (VAR)
- USFS treatment of VAR on federal lands – the Forest Service expenditure authority is limited
- Treatments for watershed, roads and trails, endangered species, etc
- Many risks lie downstream

Water Resources Sustainability

- Infrastructure
- Water Quality
- Water Quantity

Post-Fire Effects

- Reservoir sedimentation – shorter reservoir life
- Debris flow and flood damage to canals and water lines
- Temporary loss of water supply sources due to ash
- Wildfire disturbance adds to overall cumulative disturbance of fish and wildlife habitat
- Less carbon sequestration